Theory of Planned Behaviour

The Theory of Planned Behaviour (TPB) is one of the most influential theories of human behaviour. It posits that individual behaviour is driven by intention, which is influenced by attitude, subjective norm, and perceived behavioural control. It has been applied across many research domains.

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Theory Factsheet

Proposed By: Ajzen, 1991

Parent Theory: Theory of Reasoned Action

Related Theories: Decomposed Theory of Planned Behaviour, Technology Acceptance Model, Unified Theory of Acceptance and Use of Technology

Discipline: Psychology

Unit of Analysis: Individual

Level: Micro-level

Type: Theory for Explaining and Predicting

Operationalised: Quantitatively

Introduction

The Theory of Planned Behaviour (TPB) is an extension of the Theory of Reasoned Action (TRA), which is considered one of the most fundamental conceptual frameworks explaining human behaviour. According to TRA, an individual's behaviour is determined by their intention to perform the targeted behaviour and this intention is a function of two determinants: their attitude toward the behaviour and subjective norm (Fishbein & Ajzen, 1975). Attitude toward the behaviour refers to "*an individual's positive or negative feelings (evaluative affect) about performing the target behaviour*" (Fishbein & Ajzen, 1975:p216), and subjective norm is defined as a"*person's perception what most people who are important to (them) think (they) should or should not perform the behaviour in question*" (Fishbein & Ajzen, 1975:p302). According to the theory, an individual is more inclined to perform a behaviour when they have a positive feeling about it and consider that important others think they should do so. However, behaviours are not always easily performed, and individuals often have only incomplete volitional control over a behaviour (Ajzen, 1991). That is to say, someone may not always have the resources, opportunities, and/or abilities to conduct a goal-directed behaviour even though they evaluate it favourably and have positive social support. To

address this limitation and to understand and predict human behaviour better, TPB was developed by extending TRA with the construct of perceived behavioural control, which refers to "*people's perception of the ease or difficulty of performing the behaviour of interest*" (Ajzen, 1991:p188). Perceived behavioural control was proposed to be the third determinant of intention and it was also suggested that it influenced behaviour directly with intention in the earlier version of TPB (Ajzen, 1991). In the later version, perceived behavioural control was proposed to moderate the influence of intention on behaviour to enhance the predictability of behaviour (Fishbein, 2015).

Theory

TPB traces the causal links from beliefs to actual human behaviour and it is implied that individuals make decisions based on rational considerations of available information. There are three kinds of considerations to guide behaviour: behavioural beliefs, normative beliefs, and control beliefs. Behavioural beliefs are conceptualised as "*the likely consequences or other attributes of the behaviour*" (Ajzen, 2002:p665); they reflect an individual's subjective evaluation of the potential outcome occurring following their performance of the behaviour of interest. For instance, an individual may hold the belief that going to the gym (the behaviour) can help them be fit (the outcome). Behavioural beliefs are determinants of attitude, which is a learned disposition and reflects an individual's evaluation of the desirability of a targeted behaviour. From a deductive point of view, the more positive the attitude, the stronger an individual's intention will be to perform the behaviour.

Normative beliefs refer to "*the normative expectations of other people*" (Ajzen, 2002:p665); they reflect the subjective evaluation of others' approval or disapproval of the behaviour. The term "other people" concerns the individual's given referent individuals or group, which include people who are important to the individual and influence their behaviour, e.g. their friends, family, peers, or supervisors. Normative beliefs lead to subjective norm. Subjective norm reflects an individual's perception of social pressure (Conner & Norman, 2015); it refers to whether the targeted behaviour would be accepted by those important others for the individual to gain social approval or to avoid social rejection. Subjective norm typically positively influences behavioural intention. However, according to a meta-analysis conducted by Armitage and Conner (2001), subjective norm was found to be the weakest predictor of intention in general. It has been suggested that attitudinal components appear to be more important than normative components in determining behavioural intentions: "*personal considerations tended to overshadow the influence of perceived social pressure*" (Ajzen, 1991:p189). Another explanation for subjective norm's relatively low predictive power, offered by Trafimow and Finlay (1996), is that only a minority of individuals conduct behaviours mainly based on perceived social pressure. Their behaviours may be influenced or guided by other types of norms, such as personal norm, which refers to people's feelings of personal obligations and commitments to conduct a specific behaviour (Harland, Staats & Wilke, 1999).

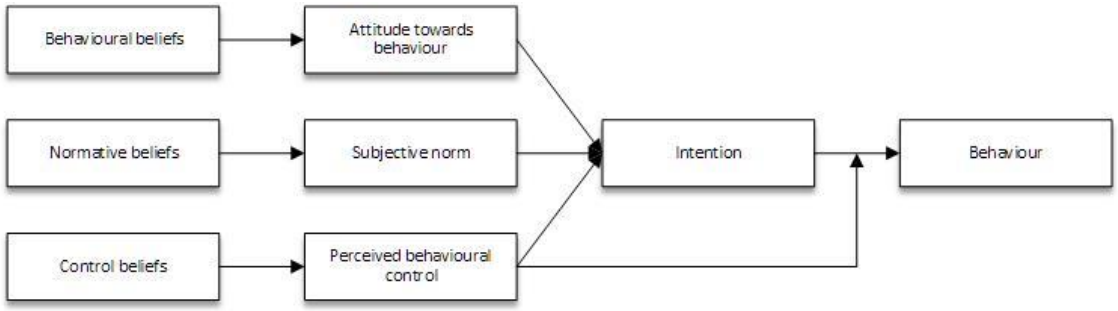
Control beliefs denote "*the presence of factors that may further or hinder performance of the behaviour*" (Ajzen, 2002:p665). The factors can be internal and/or external (Tenenbaum & Eklund, 2020). Internal factors could be information, skills, ability, emotions, and time. External factors could be opportunities, unanticipated events, and dependency on other people. Individuals' perception of the likelihood of those factors being present when performing the behaviour produces perceived behavioural control. According to Ajzen (2002:p668), perceived behavioural control "*should be read as perceived control over the performance of a behaviour*", rather than the control over the outcome of the behaviour. Perceived behavioural control plays a dual role in TPB, where it co-determines intention with attitude and subjective norm, and co-determines behaviour with intention in the earlier versions of TPB. It has been reconceptualised to moderate the effect of intention in later versions of the theory (Fishbein, 2015). As the most distinctive difference between TPB and TRA, the

more control that an individual perceives to have over a behaviour, the stronger intention they may have and the more likely they are to perform the behaviour. When TPB was initially proposed, Ajzen (1991) noted that the terms perceived behavioural control and self-efficacy could be used interchangeably. However, subsequent literature has suggested distinctions between these two terms or breakdowns of the control construct. For instance, Pavlou & Fygenson (2006:p119) used two distinct dimensions, self-efficacy and controllability, to represent perceived behavioural control. Self-efficacy refers to "*individual judgements of a person's capabilities to perform a behaviour*" (Pavlou & Fygenson, 2006:p119), and controllability is defined as "*individual judgements about the availability of resources and opportunities to perform the behaviour*" (Pavlou & Fygenson, 2006:p119).

These three types of beliefs are assumed to be readily accessible in memory and respectively result in attitude toward the behaviour, subjective norm, and perception of behavioural control, which together predict behavioural intention (Ajzen, 1991). TPB addressed the limitations of TRA by incorporating control beliefs and the perceived behavioural control construct to account for situations where individuals may intend to act but lack the necessary control or resources to do so. This was important because it improves the ability to predict behaviour in real-world situations where factors beyond motivation and intention (like external constraints or personal capabilities) influence whether people can actually perform a given behaviour.

The relative importance of attitude, subjective norm, and perceived behavioural control on intention has been noted to vary across behaviours and populations. In research conducted by Barbera and Ajzen (2020), the significance and importance of these three determinants has been observed to vary across three different behaviours (voting, reducing household waste, and energy consumption). For example, in the case of Barbera and Ajzen (2020), when it comes to voting behaviour, attitude was shown to be the most important predictor of intention, while subjective norm was surprisingly not significant. In contrast, attitude was not significant in reducing household waste behaviour, while subjective norm was an important factor. Regarding different populations, it has been suggested that demographic variables and personality traits influence the formation and importance of the three predictors (Tenenbaum & Eklund, 2020). For instance, Moon (2021) employed TPB to investigate people's intention to visit a green restaurant, and they considered the moderation role of age and gender. They found that males were more inclined to be influenced by their referents and the effect of perceived behavioural control was greater for older populations. Regarding personality traits, Hsu et al. (2017) investigated the moderation role of price sensitivity in influencing people's purchase intention of green skincare products. They found that the effects of attitude, subjective norm, and perceived behavioural control were stronger for people with higher price sensitivity. Intention is held to be the most influential determinant of behaviour in TPB. It indicates an individual's readiness or how much effort they are willing to exert to perform the targeted behaviour. A positive relationship is expected between intention and behaviour (Ajzen, 1991).

Figure 1: Theory of Planned Behaviour (the Theory of Reasoned Action omits the perceived behavioural control construct)



Theory Extensions

The Decomposed Theory of Planned Behaviour

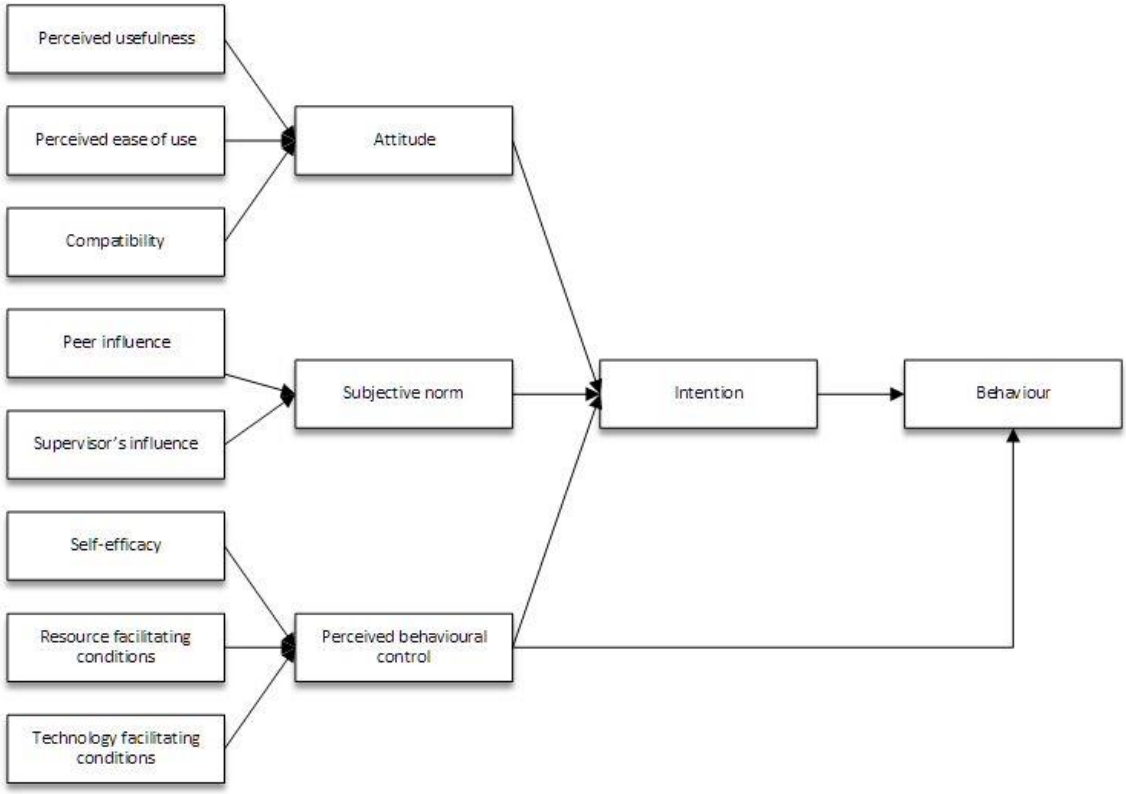
Understanding individuals' acceptance and use of information technology has become a popular research area since the 1980s. As stated by Taylor and Todd (1995), one important stream of this area is to identify determinants of behavioural intention to predict usage, whereas another stream uses a diffusion of innovation perspective. Within the first stream, TPB as an intention-based model has been well-applied. Although the three determinants influencing intention were clear, their corresponding belief structures were not well understood in the Information Systems (IS) research domain. To address this limitation, as well as to operationalize TPB in the context of users' acceptance of technology, Taylor and Todd (1995) decomposed the three belief structures by referring to other technology acceptance theories and the stream of innovation diffusions, naming the resultant model the decomposed Theory of Planned Behaviour (DTPB).

Derived from the perceived characteristics of an innovation (Rogers, 1983) and also considering the technology acceptance model (Davis, 1989), attitudinal (behavioural) belief structures were decomposed into perceived usefulness (i.e., perception that the usage of a technology would enhance job performance), ease of use (i.e., perception of the ease or difficulty of using a technology), and compatibility (i.e., the degree to which the technology fits with someone's values, experiences, and needs). Focusing on the context of technology acceptance in organisations, normative belief structures were decomposed into peer influence and superiors' influence. Control belief structures were decomposed into self-efficacy, resource facilitating conditions, and technology facilitating conditions. Self-efficacy, which is related to perceived ability, stands for someone's internal constraints to use the technology. The resource facilitating condition (e.g., availability of time and money) and technology facilitating condition (e.g., compatibility with current technologies in use) reflect the external constraints. The model was validated and tested with a sample of 786 students in a university using a computing resource centre as the technology example. Taylor and Todd (1995) also compared DTPB with TPB and TAM, with the results indicating that DTPB explained both behaviour intention and usage behaviour better than the other two theories.

DTPB has been applied to investigate user acceptance of various technologies since its formation. For instance, Shih and Fang (2004) employed DTPB to understand people's adoption of internet banking and found that 66% of intention could be explained by the decomposed factors. Garay et al. (2019) used DTPB as the framework to explore accommodation managers' intention to adopt sustainability-oriented innovations. The three factors with their decomposed structures informed 56% of their behavioural intentions. Although DTPB was proposed in the IS area, it has been used in

many other disciplines. For example, in education, DTPB has been used as the framework to investigate teachers' and/or students' adoption of different teaching techniques, such as digital literacy (Sadaf & Gezer, 2020), STEM education (Wu et al., 2022), and e-learning (Santos & Okazaki, 2013).

Figure 2: Decomposed Theory of Planned Behaviour



The Reasoned Action Approach

The reasoned action approach (RAA) was proposed based on TPB by Fishbein and Ajzen (2015) with the aim of maximizing the precision of behaviour prediction. RAA retained the structure of TPB but broke the three determinants of intention down into two related but distinct subcomponents.

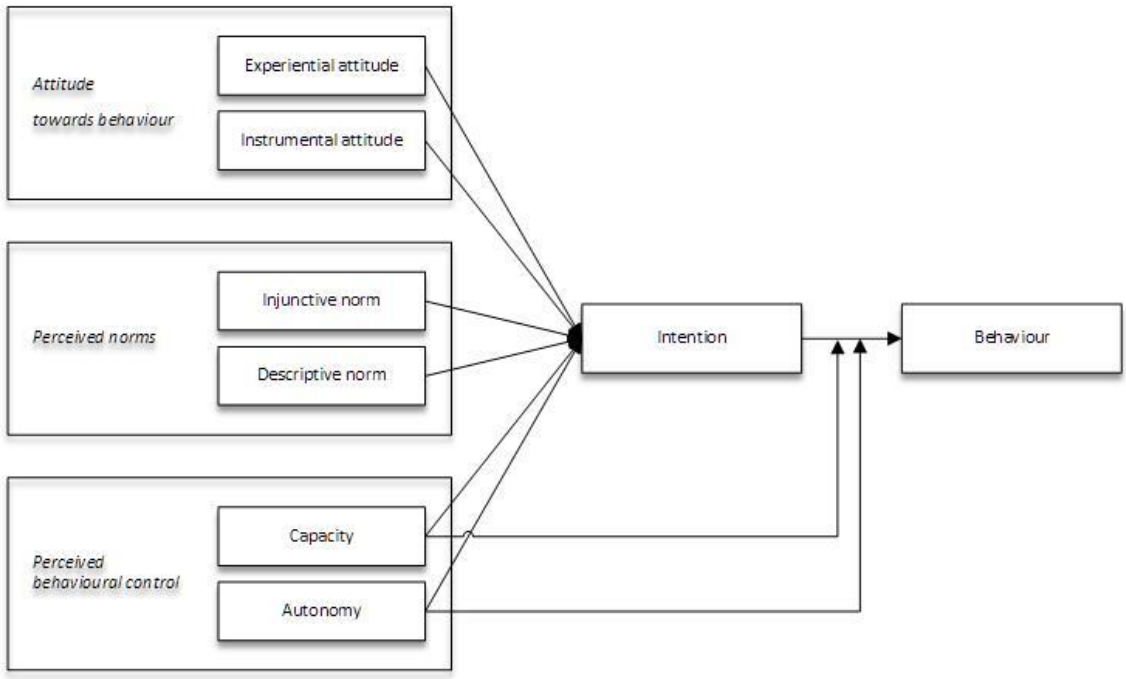
Attitude towards behaviour includes experiential and instrumental attitudes as its subcomponents. Experiential attitude is rooted in an individual's subjective evaluation that performing the behaviour of interest would involve a certain experience, which reflects the more affective aspect of attitude (Hagger et al., 2020). In contrast, instrumental attitude focuses more on the cognitive aspect, and it is based on an individual's evaluation of the outcome occurring after performing a behaviour. To illustrate, "interesting-boring" and "valuable-worthless" are example descriptors of experiential and instrumental attitudes respectively. It has been suggested that experiential attitude is more closely linked to intention and behaviour compared with instrumental attitude (Tenenbaum & Eklund, 2020).

Subjective norm is reconceptualised as perceived norm in RAA, and it contains injunctive and descriptive norms. Injunctive norm concerns an individual's perception regarding whether the targeted behaviour would be approved by important others, while descriptive norm is about whether the important others themselves perform the behaviour (Hagger et al., 2020).

Capacity and autonomy are the subcomponents representing the perceived behavioural control construct in RAA. Capacity reflects an individual's perception of the ease or difficulty of conducting a behaviour, which is noted to be overlapping with self-efficacy (Tenenbaum & Eklund, 2020). Autonomy refers to the extent to which an individual believes the performance of the behaviour is up to them (Hagger et al., 2020).

RAA has attracted a great deal of attention particularly in the field of health behaviours (McEachan et al., 2016). For instance, it was found that various human health behaviours can be understood by RAA, such as sleeping (Branscum, Fay & Senkowski, 2020), smoking (Dobbs et al., 2019), doing sports (Branscum & Fairchild, 2019), and COVID-19 prevention (Norman, Wilding & Conner, 2020). In addition, it has been demonstrated to have the ability to predict health protection and risk behaviours (Conner et al., 2017). Therefore, RAA provides a powerful tool to promote health behaviours (Fishbein, 2008).

Figure 3: The Reasoned Action Approach



Applications

Rooted in psychology, TPB has been applied across numerous disciplines where the understanding and prediction of human behaviour are needed. In an editorial, Bosnjak et al. (2020) conducted a review based on more than 4,200 articles that referenced TPB in the Web of Science bibliographic database. The results revealed that TPB has received considerable attention in a range of areas,

particularly business and management (e.g., IS, entrepreneurship, and tourism and hospitality), and psychology (e.g., environmental behaviour, health behaviour, and education research).

Table 1: Key research fields where TPB has been applied with example studies

Research fields		**Example studies**
Business and management	IS	(Baker & White, 2010; George, 2004;Pavlou & Fygenson, 2006)
	Entrepreneurship	(Kautonen, van Gelderen & Fink, 2015;Kautonen, van Gelderen & Tornikoski, 2013;Krueger & Carsrud, 1993;)
	Tourism and hospitality	(Hsu & Huang, 2012; Lam & Hsu, 2006;Quintal, Lee & Soutar, 2010)
Psychology	Environmental behaviour	(Chan, 1998; Fielding, McDonald & Louis, 2008; Harland, Staats & Wilke, 1999)
	Health behaviour	(Ajzen, 2011;Godin & Kok, 1996;McEachan et al., 2011)
	Education	(Lee, Cerreto & Lee, 2010; Lung-Guang, 2019;Manning, 2009)

In the business and management domains, the crucial and distinctive role of TPB is widely acknowledged in many research areas. For instance, in the IS research field, TPB has been an important lens to understand people's adoption of technologies in both organisation and consumer contexts. First and foremost, TPB influenced and inspired the development of other important technology acceptance theories as a fundamental theory (Venkatesh & Davis, 2000; Venkatesh et al., 2003). Furthermore, empirical studies have been employing TPB as the theoretical framework to investigate people's intention to use and purchase, and their actual usage of, technologies. Pavlou and Fygenson (2006) extended TPB to understand and predict people's adoption of electronic commerce. This piece of work focused on users' behaviours when getting information and purchasing products from online vendors. Apart from identifying beliefs affecting the three determinants of intentions and examining the relationships proposed within the original TPB framework, they also explored the relationships between intention to get information and intention to purchase, as well as getting information behaviour and purchasing behaviour. The results suggested that attitude, subjective norm, and perceived behavioural control explained more than

half of the variances of intention to get information and to purchase. With the rapid development of artificial intelligence (AI) and machine learning, TPB has been used to investigate people's adoption of products equipped with those technologies. Taking automated vehicles as an example, Kaye et al. (2020) used TPB to explore drivers' intention to operate conditional and fully automated vehicles and found that TPB is able to explain more than 60% of variance in both scenarios.

Apart from IS, TPB exhibits relevance and robustness in the prediction of entrepreneurial intentions and actions. Using longitudinal survey data collected from Austrian and Finnish citizens aged from 20 to 64 years old, Kautonen et al. (2015) supported all the proposed relationships in TPB, with subjective norm being the most important determinant of intention. Su et al. (2021) employed TPB as the framework to investigate Chinese university students' entrepreneurial intention, and it was found that 74% of intention can be explained by attitude and perceived behavioural control. However, subjective norm was shown to be a non-significant factor. TPB has also been integrated with other theories to predict entrepreneurial intentions and actions. For instance, in a meta-analysis study (Schlaegel & Koenig, 2014), TPB was integrated with the Entrepreneurial Event Model to predict entrepreneurial intent. It was found that apart from being significant direct predictors of entrepreneurial intent, attitude, subjective norm, and perceived behavioural control were all significant determinants of perceived desirability and perceived feasibility – the key factors of the Entrepreneurial Event Model.

In the field of tourism and hospitality research, TPB also appears to be influential. The theory has been used to investigate and understand people's willingness to visit or their actual visits to certain destinations. For instance, Quintal et al. (2010) extended TPB with perceived risk and perceived uncertainty to investigate Chinese, Japanese, and South Korean residents' intention to visit Australia. The results suggested that the explanatory power of the model, and the significance and importance of the determinants, varied observably in those three country settings. This research also found that perceived risk can significantly affect attitude, and perceived uncertainty can significantly influence attitude and perceived behavioural control. Soliman (2021) employed TPB to understand visitors' intention to revisit a destination, and they also considered tourist motivation, electronic word of mouth (e-WOM), destination familiarity, and destination image as predictors. All of the proposed relationships were supported and the extended TPB explained 69% of the variance. The relationships between e-WOM and the three determinants in TPB were further explored by Jalilv and Samiei (2012) in the context of visiting an Iranian city. It was found that e-WOM generated considerable positive influence on all three determinants of intention.

TPB plays a key role in psychology studies. In the environment research area, TPB was employed to investigate intervening in and changing people's behaviours to act and consume more sustainably. This is known as promoting consumers' green behaviours in social marketing (White, Habib & Hardisty, 2019). For instance, Mak et al. (Mak et al., 2018) extended TPB to understand how to promote food waste recycling in both commercial and industrial contexts. Si et al. (2020) extended TPB to explore people's intention and behaviour in terms of bike usage and sharing. Becker-Leifhold (2018) used TPB to understand collaborative fashion consumption in the clothing industry. In a review of TPB in environmentally focused studies, Yuriev et al. (2020) witnessed an increasing number of studies employing TPB as their theoretical framework. Although the guideline of application of TPB has been respected in this discipline, it has also been noticed that researchers tend to extend TPB to understand the phenomena better with additional constructs such as moral norm, past behaviour, anticipated emotions, environmental awareness, environmental values, and sense of community. Interestingly, some studies reported that the original factors all hold up when TPB is extended with other factors (Blok et al., 2015;Chan & Bishop, 2013;Chu & Chiu, 2003), while other research provided evidence that some of the original three predictors become non-significant. For example, Fielding et al. (2008) found that perceived behavioural control became non-significant, and the importance of subjective norm dropped greatly, when TPB was extended with group

membership and self-identity. Shi et al. (2017) found that subjective norm became non-significant when moral norm and descriptive norm were added as the antecedents of intention.

TPB also serves as an important tool to understand health behaviours. For instance, it has been applied to investigate mental disorder prevention (Shi & Kim, 2020), condom usage (Guan et al., 2016), organ donation (Bresnahan et al., 2007), childhood obesity prevention (Andrews, Silk & Eneli, 2010), and healthy eating behaviours (Grønhøj et al., 2012). In addition, TPB offers implications for more effective communications to promote healthy behaviours. Anderson et al. (2013) extended TPB to predict young adults' routine dental check-ups. They developed messages based on TPB and noted that subjective norm-based messages could prompt dental check-ups significantly. Wang (2009) focused on promoting regular physical activity participation using TPB. Wang suggested that greater attention should be paid to attitude constructs and targets' personality traits when designing messages.

In the education research domain, Ajzen and Madden (1986) is a landmark paper, which emphasised the role of perceived behavioural control in predicting goal-directed behaviour. It was found that students' perception of their ability to perform a behaviour can affect both their intentions and the behaviour itself. TPB has also been applied to understand both students' and teachers' intentions and behaviours in education studies. Martin and Kulinna (2004) employed TPB to investigate teachers' intention to teach physical education classes that required engaging in moderate to vigorous physical activities. The results demonstrated the significance of all three determinants of intention, accounting for 59% of the variance. Regarding student behaviours, TPB has been used to investigate students' intention to complete education (Davis et al., 2002) and to withdraw from education (Dewberry & Jackson, 2018). TPB also facilitates the understanding of learning and teaching methods or technique adoption. For instance, Cheon et al. (2012) used TPB to explore students' readiness to use mobile learning in the higher education sector and all three determinants were again found to positively affect usage intention. A remarkable 87.2% of intention was explained, with perceived behavioural control being the most crucial factor.

Limitations

Having only four concepts to explain human behaviour, TPB has been questioned regarding its trade-off between parsimony and validity. One criticism in this regard is that it is "*not taking sufficient account of cognitive and affective processes that are known to bias human judgments and behaviour*" (Ajzen, 2011:p1115-1116). For instance, TPB does not include unconscious, irrational, and emotional influences in the theory.

Regarding intention, it has been argued that individuals' behavioural, normative, and control beliefs are easily influenced and changed by many intervening events, which can lead to changes in their attitudes, subjective norms, and perceived behavioural control (Sniehotta, Presseau & Araújo-Soares, 2014). As a result, their intentions can eventually be affected. However, TPB cannot address this issue since it assumes the formation of intention and the performance of human behaviour as a linear decision-making process. In addition, scholars have been doubtful about the notion that beliefs only lead to one of the three determinants rather than intention directly (Araujo-Soares et al., 2013).

With regard to actual behaviour, the majority of variance is not explained by the concepts included in TPB in many studies, and the validity of TPB varies considerably when moderators, such as demographics, are applied (Sniehotta, Presseau & Araújo-Soares, 2014). TPB also has the limitation that it can only predict one behaviour at one time, while multiple human behaviours may occur simultaneously or sequentially under complicated situations (Yuriev et al., 2020).

Another key criticism of TPB lies in its inability to fully address the intention-behaviour gap: the phenomenon where strong behavioural intentions do not always translate into corresponding actions (Sheeran & Webb, 2016). While TPB emphasises intentions as a central predictor of behaviour, it underestimates the influence of situational and contextual factors which can hinder action despite favourable intentions. Additionally, the model assumes a linear and rational progression from intention to behaviour, and it assumes that humans are rational decision-makers, like most theories that predict behaviour. However, many behaviours are influenced by emotional, habitual, or impulsive factors, which TPB does not adequately account for (Sniehotta, Presseau & Araújo-Soares, 2014). These limitations reduce the predictive power of TPB in real-world contexts, particularly for behaviours that require sustained effort or are influenced by dynamic external factors. Despite its limitations, it is still considered to be one of the most fundamental theories to predict and understand human behaviour.

Concepts

Attitude Toward The Behaviour (Independent): An individual's positive or negative feelings (evaluative affect) about performing the target behaviour. (Fishbein & Ajzen, 1975)

Subjective Norm (Independent): An individual's perception that most people who are important to them think they should or should not perform the behaviour in question. (Fishbein & Ajzen, 1975)

Perceived Behavioural Control (Independent): An individual's perception of the ease or difficulty of performing the behaviour of interest. (Ajzen, 1991)

Intention (Independent/Dependent): An individual's readiness to perform a given behaviour. (Ajzen, 2011)

Self-efficacy (Independent): An individual's judgement of their capabilities of performing a given behaviour. (Pavlou & Fygenson, 2006)

Controllability (Independent): An individual's judgement about the availability of resources and opportunities to perform a given behaviour. (Pavlou & Fygenson, 2006)

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